

Claims

1. A method for assigning packets belonging to traffic of a network to different quality of service (QoS) treatments, comprising the steps of
receiving a packet, and
assigning the packet to one of a preselected of QoS treatments, based to an attribute the packet, in accordance with a set of rules that was created pursuant to a statistical analysis of traffic in the network.
2. The method of claim 1 where the network is an enterprise network that is part of a larger network.
3. The method of claim 2 where the larger network is the Internet.
4. The method of claim 1 where the attribute is a field in a header of said packet, and said assigning is based on value of said field.
5. The method of claim 4 where the field is a connection port number.
6. The method of claim 4 where the field is a source IP number.
7. The method of claim 4 where the field is a destination IP number.
8. The method of claim 1 where said step of assigning is based combination more than one attribute.
9. The method of claim 8 where said step of assigning is based values of said more than one attribute.
10. The method of claim 1 further comprising an analysis process for creating said set of rules, said analysis process comprising the steps of:

obtaining statistical data regarding connections in said network, segregated by different values of said attribute, which statistical data pertains to preselected connection features, and

associating each of said values of said attribute with a class, pursuant to a classification that maps said statistical data to classes, based on previously conducted training session that extracts characteristics of said preselected features for each of said classes.

11. The method of claim **10** further comprising a training process for executing said training session, said training process comprising the steps of:

selecting applications that are representative of different ones of said classes; and
analyzing traffic in a training network that belongs to said applications, to develop statistics for said preselected features.

12. The method of claim **11** where said training network encompasses more than said network where packets are assigned.

13. A method executed in a network for assigning packet traffic to classes of service comprising the steps of

receiving a packet; and
assigning the packet to said one of said classes based on one or more attributes of the packet, pursuant to a mapping derived from analysis of past traffic on said network, which analysis correlates said one or more attributes associated with packets of different connections with connection features.

14. A method for developing a corpus of data for creating set of rules for assigning packets for different QoS treatments, comprising the steps of:

selecting a set of classes;
selecting a set of applications, where each of said applications unambiguously belongs to only one of said classes, and where said set is such that every one of said classes is covered by at least one of the application in the set;

selecting a set of features;
capturing traffic in a training network, which traffic belongs to applications that are included in said set; and
developing statistics for said set of features for each of said classes from said traffic in said training network.

15. A method for developing a set of rules for assigning packets in a target network to different classes, comprising the steps of:

selecting one or more packet attributes;
analyzing traffic in said target network to create statistical information for each value of said one or more packet attributes, which statistical information pertains to the selected set of features of claim **14**; and
classifying each of said values of said one or more packet attributes into one of the classes of claim **14** based on a selected algorithms that investigates said statistical information for each of said values of said one or more packet attributes and the statistics developed in the method of claim **14**.

16. The method of claim **15** further comprising a step of mapping said classes to QoS treatments.

17. The method of claim **15** where said step of analyzing to create statistical information creates said statistical information recursively.

18. The method of claim **15** where said step of analyzing analyzes traffic of a predetermined time interval of data.